

CLAIMS

1. An audio/video generation apparatus, comprising
an audio and/or video generation device operable to generate audio and/or
5 video material, and
a metadata generation processor operable to generate metadata describing the
content and/or attributes of the audio/video material, wherein the metadata generation
processor is operable to generate a reference value providing a quasi-unique reference
to the audio/video material with a reduced amount of data than the audio/video
10 material itself, the reference value being generated from data values representing the
audio/video material in accordance with a predetermined relationship.
2. An audio/video generation apparatus as claimed in Claim 1, wherein the
metadata generation processor includes a hashing processor operable to generate the
15 quasi-unique reference from the audio/video material, the quasi-unique reference being
a hash value.
3. An audio/video generation apparatus as claimed in Claim 1, comprising
a communications processor operable to communicate the metadata separately from
20 said audio/video material.
4. An audio/video generation apparatus as claimed in Claim 1, comprising
a data carrier, the audio/video generation device being operable to store the
audio/video material on the data carrier.
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5. An audio/video generation apparatus as claimed in Claim 1, comprising
a second data carrier, the metadata generation processor being operable to store the
metadata on the second data carrier.

6. An audio/video generation apparatus as claimed in Claim 1, wherein the predetermined relationship provides the data values of parts of the audio/video material from which the quasi-unique reference is generated.

5 7. An audio/video generation apparatus as claimed in Claim 6, wherein the predetermined relationship identifies pixels within a frame or a plurality of frames of the video material, the values of which pixels are used to generate the quasi-unique reference value.

10 8. An audio/video generation processor as claimed in Claim 1, wherein the metadata is represented as a data structure describing the content of at least one shot or sub-shot of audio/video material, the data structure comprising

a volume identification defining the data carrier on which the audio/video material is represented,

15 at least one shot identification defining the at least one shot or sub-shot within the audio/video material, and

the quasi-unique reference value generated from the audio/video data within the shot or sub-shot.

20 9. A camera including an audio/video generation apparatus as claimed in Claim 1, wherein the metadata generation processor forms at least part of a camera utility device releasably attached to the camera.

25 10. A metadata generation processor operable to generate metadata describing the content or attributes of audio/video material, the processor comprising

a reference value generator operable to generate a quasi-unique reference to the audio/video material with a reduced amount of data than the audio/video material, the reference value being generated from data values representing the audio/video material.

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11. A metadata generation processor as claimed in Claim 10, comprising

a data store for storing the metadata, the quasi-unique reference value being stored in the data store in association with the metadata describing the audio/video material from which the quasi-unique reference was generated.

5 12. A metadata generation processor as claimed in Claim 10, comprising a hashing processor operable to generate the quasi-unique reference from the audio/video material, the quasi-unique reference being a hash value.

10 13. A camera utility device including a metadata generation processor as claimed in Claim 10.

 14. A data structure describing the content of at least one shot or sub-shot of audio/video material, the data structure comprising
 a volume identification defining the data carrier on which the audio/video
15 material is represented,
 at least one shot identification defining the at least one shot or sub-shot within the audio/video material, and
 metadata including a quasi-unique reference value associated with the shot identification, the quasi-unique reference being generated from the audio/video data
20 within the shot or sub-shot.

 15. A data structure as claimed in Claim 14, wherein the volume identification is arranged at a first hierarchical level and the shot identification is arranged at a lower hierarchical level and the metadata describing the shot or sub-shot
25 is arranged with respect to the shot hierarchical level.

 16. A data structure as claimed in Claim 14, wherein the volume identification and the shot identification are defined as tree nodes in accordance with the first and the lower hierarchical levels, the volume identification having a start point
30 and an end point defining a volume node and the shot has a start point and an end point defining a shot node.

17. A data structure as claimed in Claim 14, wherein the metadata comprises volume metadata describing the content or attributes associated with the material represented on the volume and shot metadata describing the content or attributes associated with the shot or sub-shot.

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18. A data structure as claimed in Claim 14, wherein a plurality of shots are arranged within the lower hierarchical level.

19. A data structure as claimed in Claim 14, wherein the hierarchy of the volume and shot nodes are arranged to the effect that the hierarchy is defined by a schema in accordance with predetermined rules, the rules being established to separate and extract metadata of different types in accordance with the hierarchy.

20. A data structure as claimed in Claim 19, wherein the schema is defined in accordance with a mark-up language.

21. A data structure as claimed in Claim 20, wherein said mark-up language is XML or the like.

22. A data carrier representing a data structure according to Claim 14.

23. A metadata association processor operable to regenerate a quasi-unique reference from audio/video material, the quasi-unique reference being regenerated in accordance with a predetermined relationship of data values from predetermined parts of the audio/video material, the predetermined relationship being the same as a predetermined relationship which was used by a metadata generation processor to generate an original quasi-unique reference from corresponding parts of the audio/video material and to generate metadata describing the content and/or attributes of the audio/video material, wherein the metadata association processor is operable to search the metadata for a match between the original quasi-unique reference and the regenerated quasi-unique reference value, and

to associate the metadata stored in association with the original quasi-unique reference with the audio/video material from which material the regenerated quasi-unique reference was produced.

- 5 24. An ingestion processor comprising
- an audio/video material reproduction device operable to receive a data carrier bearing audio/video material and to reproduce the audio/video material from the data carrier, and
- a metadata ingestion processor operable to receive metadata describing the
10 content of the audio/video material, the metadata including an original quasi-unique reference value generated from the audio/video material in a accordance with a predetermined relationship with the material, and
- a metadata association processor operable to regenerate the quasi-unique reference from the audio/video material, the quasi-unique reference being regenerated
15 in accordance with the predetermined relationship of data values from the predetermined parts of the audio/video material, wherein the metadata association processor is operable
- to search the metadata for a match between the original quasi-unique reference and the regenerated quasi-unique reference value, and
- 20 to associate the metadata stored in association with the original quasi-unique reference with the audio/video material from which material the regenerated quasi-unique reference was produced.

- 25 25. An ingestion processor as claimed in Claim 24, wherein the metadata association processor includes a hashing processor operable to regenerate the quasi-unique reference from the audio/video material, the original and the regenerated quasi-unique reference being hash values.

- 30 26. An ingestion processor as claimed in Claim 24, wherein the metadata association processor is operable to identify a scene change within the content of the audio/video-material from the relative value of the hash values generated for each frame of the audio/video material.

27. A method of producing audio and/or video material with metadata describing the content and/or attributes of the audio/video material, the method comprising

- 5 generating audio and/or video material,
 generating metadata describing the audio/video material, including generating a reference value providing a quasi-unique reference to the audio/video material with a reduced amount of data than the audio/video material, the reference value being generated from data values representing predetermined parts of the audio/video
10 material in accordance with a predetermined relationship, and
 storing the quasi-unique reference value in association with the metadata describing the audio/video material from which audio/video material the quasi-unique reference was generated.

- 15 28. A method as claimed in Claim 27, wherein the quasi-unique reference from the audio/video material, the quasi-unique reference being a hash value.

29. A method as claimed in Claim 27, comprising
 communicating the metadata separately from the audio/video material.

- 20 30. A method as claimed in Claim 27, comprising
 storing the audio/video material on a first data carrier and storing the metadata on a second data carrier.

- 25 31. A method of associating audio and/or video material with metadata describing the content and/or attributes of the audio/video material produce, the method comprising

- regenerating a quasi-unique reference from audio/video material, the quasi-unique reference being regenerated in accordance with a predetermined relationship of
30 data values from predetermined parts of the audio/video material, the predetermined relationship being the same as a predetermined relationship used to generate an original quasi-unique reference from corresponding parts of the audio/video material

and to generate metadata describing the content and/or attributes of the audio/video material,

searching the metadata for a match between the original quasi-unique reference and the regenerated quasi-unique reference value, and

5 associating the metadata stored in association with the original quasi-unique reference with the audio/video material from which material the regenerated quasi-unique reference was produced.

32. A computer program providing computer executable instructions,
10 which when loaded onto a computer configures the computer to operate as an audio/video generation apparatus, a camera, a camera utility device or an ingestion processor according to Claim 1.

33. A computer program providing computer executable instructions,
15 which when loaded on to a computer causes the computer to perform the method according to Claim 27.

34. A computer program product having a computer readable medium
20 recorded thereon information signals representative of the computer program claimed in Claim 32.

35. A computer program product having a computer readable medium
25 recorded thereon information signals representative of the computer program claimed in Claim 33.